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RAW SEQUENCE LISTING DATE: 09/30/2002  
 PATENT APPLICATION: US/10/055,797 TIME: 08:10:34

Input Set : N:\CrF3\Datahold\EFS\10055797\GNCA-P03-007SequenceListing.txt  
 Output Set: N:\CRF4\09302002\J055797.raw

3 <110> APPLICANT: Hammond et al.  
 5 <120> TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR RNA INTERFERENCE  
 7 <130> FILE REFERENCE: GNCA-P03-007  
 9 <140> CURRENT APPLICATION NUMBER: 10/055,797  
 10 <141> CURRENT FILING DATE: 2002-01-22  
 12 <150> PRIOR APPLICATION NUMBER: 60/189,739  
 W--> 13 <151> PRIOR FILING DATE: PCT/US01/08435  
 15 <160> NUMBER OF SEQ ID NOS: 17  
 17 <170> SOFTWARE: PatentIn version 3.1  
 19 <210> SEQ ID NO: 1  
 20 <211> LENGTH: 5775  
 21 <212> TYPE: DNA  
 22 <213> ORGANISM: Homo sapiens  
 24 <220> FEATURE:  
 25 <221> NAME/KEY: CDS  
 26 <222> LOCATION: (1)..(5775)  
 27 <223> OTHER INFORMATION:  
 29 <400> SEQUENCE: 1  
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 31 Met Lys Ser Pro Ala Leu Gln Pro Leu Ser Met Ala Gly Leu Gln Leu  
 32 1 5 10 15  
 33 atg acc cct gct tcc tca cca atg ggt cct ttc ttt gga ctg cca tgg 96  
 34 Met Thr Pro Ala Ser Ser Pro Met Gly Pro Phe Phe Gly Leu Pro Trp  
 35 20 25 30  
 36 caa caa gaa gca att cat gat aac att tat acg cca aga aaa tat cag 144  
 37 Gln Gln Glu Ala Ile His Asp Asn Ile Tyr Thr Pro Arg Lys Tyr Gln  
 38 35 40 45  
 39 gtt gaa ctg ctt gaa gca gct ctg gat cat aat acc atc gtc tgt tta 192  
 40 Val Glu Leu Leu Glu Ala Ala Leu Asp His Asn Thr Ile Val Cys Leu  
 41 50 55 60  
 42 aac act ggc tca ggg aag aca ttt att gct agt act act cta cta aag 240  
 43 Asn Thr Gly Ser Gly Lys Thr Phe Ile Ala Ser Thr Thr Leu Leu Lys  
 44 65 70 75 80  
 45 agc tgt ctc tat cta gat cta ggg gag act tca gct aga aat gga aaa 288  
 46 Ser Cys Leu Tyr Leu Asp Leu Gly Glu Thr Ser Ala Arg Asn Gly Lys  
 47 85 90 95  
 48 agg acg gtg ttc ttg gtc aac tct gca aac cag gtt gct caa caa gtg 336  
 49 Arg Thr Val Phe Leu Val Asn Ser Ala Asn Gln Val Ala Gln Gln Val  
 50 100 105 110  
 51 tca gct gtc aga act cat tca gat ctc aag gtt ggg gaa tac tca aac 384  
 52 Ser Ala Val Arg Thr His Ser Asp Leu Lys Val Gly Glu Tyr Ser Asn  
 53 115 120 125  
 54 cta gaa gta aat gca tct tgg aca aaa gag aga tgg aac caa gag ttt 432

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56	130						135					140					
57	act	aag	cac	cag	gtt	ctc	att	atg	act	tgc	tat	gtc	gcc	ttg	aat	gtt	480
58	Thr	Lys	His	Gln	Val	Leu	Ile	Met	Thr	Cys	Tyr	Val	Ala	Leu	Asn	Val	
59	145						150					155				160	
60	ttg	aaa	aat	ggt	tac	tta	tca	ctg	tca	gac	att	aac	ctt	ttg	gtg	ttt	528
61	Leu	Lys	Asn	Gly	Tyr	Leu	Ser	Leu	Ser	Asp	Ile	Asn	Leu	Leu	Val	Phe	
62							165					170				175	
63	gat	gag	tgt	cat	ctt	gca	atc	cta	gac	cac	ccc	tat	cga	gaa	ttt	atg	576
64	Asp	Glu	Cys	His	Ile	Ala	Ile	Leu	Asp	His	Pro	Tyr	Arg	Glu	Phe	Met	
65							180					185				190	
66	aag	ctc	tgt	gaa	att	tgt	cca	tca	tgt	cct	cgc	att	ttg	gga	cta	act	624
67	Lys	Leu	Cys	Glu	Ile	Cys	Pro	Ser	Cys	Pro	Arg	Ile	Leu	Gly	Leu	Thr	
68							195					200				205	
69	gct	tcc	att	tta	aat	ggg	aaa	tgg	gat	cca	gag	gat	ttg	gaa	gaa	aag	672
70	Ala	Ser	Ile	Leu	Asn	Gly	Lys	Trp	Asp	Pro	Glu	Asp	Leu	Glu	Glu	Lys	
71							210					215				220	
72	ttt	cag	aaa	cta	gag	aaa	att	ctt	aag	agt	aat	gct	gaa	act	gca	act	720
73	Phe	Gln	Lys	Leu	Glu	Lys	Ile	Leu	Lys	Ser	Asn	Ala	Glu	Thr	Ala	Thr	
74	225						230					235				240	
75	gac	ctg	gtg	gtc	tta	gac	agg	tat	act	tct	cag	cca	tgt	gag	att	gtg	768
76	Asp	Leu	Val	Val	Leu	Asp	Arg	Tyr	Thr	Ser	Gln	Pro	Cys	Glu	Ile	Val	
77							245					250				255	
78	gtg	gat	tgt	gga	cca	ttt	act	gac	aga	agt	ggg	ctt	tat	gaa	aga	ctg	816
79	Val	Asp	Cys	Gly	Pro	Phe	Thr	Asp	Arg	Ser	Gly	Leu	Tyr	Glu	Arg	Leu	
80							260					265				270	
81	ctg	atg	gaa	tta	gaa	gaa	gca	ctt	aat	ttt	atc	aat	gat	tgt	aat	ata	864
82	Leu	Met	Glu	Leu	Glu	Glu	Ala	Leu	Asn	Phe	Ile	Asn	Asp	Cys	Asn	Ile	
83							275					280				285	
84	tct	gta	cat	tca	aaa	gaa	aga	gat	tct	act	tta	att	tcg	aaa	cag	ata	912
85	Ser	Val	His	Ser	Lys	Glu	Arg	Asp	Ser	Thr	Leu	Ile	Ser	Lys	Gln	Ile	
86							290					295				300	
87	cta	tca	gac	tgt	cgt	gcc	gta	ttg	gta	gtt	ctg	gga	ccc	tgg	tgt	gca	960
88	Leu	Ser	Asp	Cys	Arg	Ala	Val	Leu	Val	Val	Leu	Gly	Pro	Trp	Cys	Ala	
89	305						310					315				320	
90	gat	aaa	gta	gct	gga	atg	atg	gta	aga	gaa	cta	cag	aaa	tac	atc	aaa	1008
91	Asp	Lys	Val	Ala	Gly	Met	Met	Val	Arg	Glu	Leu	Gln	Lys	Tyr	Ile	Lys	
92							325					330				335	
93	cat	gag	caa	gag	gag	ctg	cac	agg	aaa	ttt	tta	ttg	ttt	aca	gac	act	1056
94	His	Glu	Gln	Glu	Glu	Leu	His	Arg	Lys	Phe	Leu	Leu	Phe	Thr	Asp	Thr	
95							340					345				350	
96	ttc	cta	agg	aaa	ata	cat	gca	cta	tgt	gaa	gag	cac	ttc	tca	cct	gcc	1104
97	Phe	Leu	Arg	Lys	Ile	His	Ala	Leu	Cys	Glu	Glu	His	Phe	Ser	Pro	Ala	
98							355					360				365	
99	tca	ctt	gac	ctg	aaa	ttt	gta	act	cct	aaa	gta	atc	aaa	ctg	ctc	gaa	1152
100	Ser	Leu	Asp	Leu	Lys	Phe	Val	Thr	Pro	Lys	Val	Ile	Lys	Leu	Leu	Glu	
101							370					375				380	
102	atc	tta	cgc	aaa	tat	aaa	cca	tat	gag	cga	cac	agt	ttt	gaa	agc	gtt	1200
103	Ile	Leu	Arg	Lys	Tyr	Lys	Pro	Tyr	Glu	Arg	His	Ser	Phe	Glu	Ser	Val	

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104	385	390	395	400	
105	gag tgg tat aat aat aga aat cag gat aat tat gtg tca tgg agt gat				1248
106	Glu Trp Tyr Asn Asn Arg Asn Gln Asp Asn Tyr Val Ser Trp Ser Asp				
107	405	410	415		
108	tct gag gat gat gag gat gaa gaa att gaa gaa aaa gag aag cca				1296
109	Ser Glu Asp Asp Asp Glu Asp Glu Ile Glu Glu Lys Glu Lys Pro				
110	420	425	430		
111	gag aca aat ttt cct tct cct acc aac att ttg tgc gga att att				1344
112	Glu Thr Asn Phe Pro Ser Pro Phe Thr Asn Ile Leu Cys Gly Ile Ile				
113	435	440	445		
114	ttt gtg gaa aga aga tac aca gca gtt gtc tta aac aga ttg ata aag				1392
115	Phe Val Glu Arg Arg Tyr Thr Ala Val Val Leu Asn Arg Leu Ile Lys				
116	450	455	460		
117	gaa gct ggc aaa caa gat cca gag ctg gct tat atc agt agc aat ttc				1440
118	Glu Ala Gly Lys Gln Asp Pro Glu Leu Ala Tyr Ile Ser Ser Asn Phe				
119	465	470	475	480	
120	ata act gga cat ggc att ggg aag aat cag cct cgc aac aac acg atg				1488
121	Ile Thr Gly His Ile Gly Lys Asn Gln Pro Arg Asn Asn Thr Met				
122	485	490	495		
123	gaa gca gaa ttc aga aaa cag gaa gag gta ctt agg aaa ttt cga gca				1536
124	Glu Ala Glu Phe Arg Lys Gln Glu Glu Val Leu Arg Lys Phe Arg Ala				
125	500	505	510		
126	cat gag acc aac ctg ctt att gca aca agt att gta gaa gag ggt gtt				1584
127	His Glu Thr Asn Leu Leu Ile Ala Thr Ser Ile Val Glu Glu Gly Val				
128	515	520	525		
129	gat ata cca aaa tgc aac ttg gtg gtt cgt ttt gat ttg ccc aca gaa				1632
130	Asp Ile Pro Lys Cys Asn Leu Val Val Arg Phe Asp Leu Pro Thr Glu				
131	530	535	540		
132	tat cga tcc tat gtt caa tct aaa gga aga gca agg gca ccc atc tct				1680
133	Tyr Arg Ser Tyr Val Gln Ser Lys Gly Arg Ala Arg Ala Pro Ile Ser				
134	545	550	555	560	
135	aat tat ata atg tta gcg gat aca gac aaa ata aaa agt ttt gaa gaa				1728
136	Asn Tyr Ile Met Leu Ala Asp Thr Asp Lys Ile Lys Ser Phe Glu Glu				
137	565	570	575		
138	gac ctt aaa acc tac aaa gct att gaa aag atc ttg aga aac aag tgt				1776
139	Asp Leu Lys Thr Tyr Lys Ala Ile Glu Lys Ile Leu Arg Asn Lys Cys				
140	580	585	590		
141	tcc aag tcg gtt gat act ggt gag act gac att gat cct gtc atg gat				1824
142	Ser Lys Ser Val Asp Thr Gly Glu Thr Asp Ile Asp Pro Val Met Asp				
143	595	600	605		
144	gat gat cac gtt ttc cca cca tat gtg ttg agg cct gac gat ggt ggt				1872
145	Asp Asp His Val Phe Pro Pro Tyr Val Leu Arg Pro Asp Asp Gly Gly				
146	610	615	620		
147	cca cga gtc aca atc aac acg gcc att gga cac atc aat aga tac tgt				1920
148	Pro Arg Val Thr Ile Asn Thr Ala Ile Gly His Ile Asn Arg Tyr Cys				
149	625	630	635	640	
150	gct aga tta cca agt gat ccg ttt act cat cta gct cct aaa tgc aga				1968
151	Ala Arg Leu Pro Ser Asp Pro Phe Thr His Leu Ala Pro Lys Cys Arg				
152	645	650	655		

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153 acc cga gag ttg cct gat ggt aca ttt tat tca act ctt tat ctg cca	2016
154 Thr Arg Glu Leu Pro Asp Gly Thr Phe Tyr Ser Thr Leu Tyr Leu Pro	
155 660 665 670	
156 att aac tca cct ctt cga gcc tcc att gtt ggt cca cca atg agc tgt	2064
157 Ile Asn Ser Pro Leu Arg Ala Ser Ile Val Gly Pro Pro Met Ser Cys	
158 675 680 685	
159 gta cga ttg gct gaa aga gtt gtc gct ctc att tgc tgt gag aaa ctg	2112
160 Val Arg Leu Ala Glu Arg Val Val Ala Leu Ile Cys Cys Glu Lys Leu	
161 690 695 700	
162 cac aaa att ggc gaa ctg gat gac cat ttg atg cca gtt ggg aaa gag	2160
163 His Lys Ile Gly Glu Leu Asp Asp His Leu Met Pro Val Gly Lys Glu	
164 705 710 715 720	
165 act gtt aaa tat gaa gag gag ctt gat ttg cat gat gaa gaa gag acc	2208
166 Thr Val Lys Tyr Glu Glu Leu Asp Leu His Asp Glu Glu Glu Thr	
167 725 730 735	
168 agt gtt cca gga aga cca ggt tcc acg aaa cga agg cag tgc tac cca	2256
169 Ser Val Pro Gly Arg Pro Gly Ser Thr Lys Arg Arg Gln Cys Tyr Pro	
170 740 745 750	
171 aaa gca att cca gag tgt ttg agg gat agt tat ccc aga cct gat cag	2304
172 Lys Ala Ile Pro Glu Cys Leu Arg Asp Ser Tyr Pro Arg Pro Asp Gln	
173 755 760 765	
174 ccc tgt tac ctg tat gtg ata gga atg gtt tta act aca cct tta cct	2352
175 Pro Cys Tyr Leu Tyr Val Ile Gly Met Val Leu Thr Thr Pro Leu Pro	
176 770 775 780	
177 gat gaa ctc aac ttt aga agg cgg aag ctc tat cct cct gaa gat acc	2400
178 Asp Glu Leu Asn Phe Arg Arg Arg Lys Leu Tyr Pro Pro Glu Asp Thr	
179 785 790 795 800	
180 aca aga tgc ttt gga ata ctg acg gcc aaa ccc ata cct cag att cca	2448
181 Thr Arg Cys Phe Gly Ile Leu Thr Ala Lys Pro Ile Pro Gln Ile Pro	
182 805 810 815	
183 cac ttt cct gtg tac aca cgc tct gga gag gtt acc ata tcc att gag	2496
184 His Phe Pro Val Tyr Thr Arg Ser Gly Glu Val Thr Ile Ser Ile Glu	
185 820 825 830	
186 ttg aag aag tct ggt ttc atg ttg tct cta caa atg ctt gag ttg att	2544
187 Leu Lys Lys Ser Gly Phe Met Leu Ser Leu Gln Met Leu Glu Leu Ile	
188 835 840 845	
189 aca aga ctt cac cag tat ata ttc tca cat att ctt cgg ctt gaa aaa	2592
190 Thr Arg Leu His Gln Tyr Ile Phe Ser His Ile Leu Arg Leu Glu Lys	
191 850 855 860	
192 cct gca cta gaa ttt aaa cct aca gac gct gat tca gca tac tgt gtt	2640
193 Pro Ala Leu Glu Phe Lys Pro Thr Asp Ala Asp Ser Ala Tyr Cys Val	
194 865 870 875 880	
195 cta cct ctt aat gtt gtt aat gac tcc agc act ttg gat att gac ttt	2688
196 Leu Pro Leu Asn Val Val Asn Asp Ser Ser Thr Leu Asp Ile Asp Phe	
197 885 890 895	
198 aaa ttc atg gaa gat att gag aag tct gaa gct cgc ata ggc att ccc	2736
199 Lys Phe Met Glu Asp Ile Glu Lys Ser Glu Ala Arg Ile Gly Ile Pro	
200 900 905 910	
201 agt aca aag tat aca aaa gaa aca ccc ttt gtt ttt aaa tta gaa gat	2784

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203			915				920					925				
204	tac	caa	gat	gcc	gtt	atc	att	cca	aga	tat	cgc	aat	ttt	gat	cag	cct
205	Tyr	Gln	Asp	Ala	Val	Ile	Ile	Pro	Arg	Tyr	Arg	Asn	Phe	Asp	Gln	Pro
206			930				935				940					
207	cat	cga	ttt	tat	gta	gct	gat	gtg	tac	act	gat	ttt	acc	cca	ctc	agt
208	His	Arg	Phe	Tyr	Val	Ala	Asp	Val	Tyr	Thr	Asp	Leu	Thr	Pro	Leu	Ser
209	945				950				955			960				
210	aaa	ttt	cct	tcc	cct	gag	tat	gaa	act	ttt	gca	gaa	tat	tat	aaa	aca
211	Lys	Phe	Pro	Ser	Pro	Glu	Tyr	Glu	Thr	Phe	Ala	Glu	Tyr	Tyr	Lys	Thr
212					965				970			975				
213	aag	tac	aac	ctt	gac	cta	acc	aat	ctc	aac	cag	cca	ctg	ctg	gat	gtg
214	Lys	Tyr	Asn	Leu	Asp	Leu	Thr	Asn	Leu	Asn	Gln	Pro	Leu	Leu	Asp	Val
215					980				985			990				
216	gac	cac	aca	tct	tca	aga	ctt	aat	ctt	ttg	aca	cct	cga	cat	ttg	aat
217	Asp	His	Thr	Ser	Ser	Arg	Leu	Asn	Leu	Leu	Thr	Pro	Arg	His	Leu	Asn
218					995				1000			1005				
219	cag	aag	ggg	aaa	gcg	ctt	cct	tta	agc	agt	gct	gag	aag	agg	aaa	
220	Gln	Lys	Gly	Lys	Ala	Leu	Pro	Leu	Ser	Ser	Ala	Glu	Lys	Arg	Lys	
221					1010				1015			1020				
222	gcc	aaa	tgg	gaa	agt	ctg	cag	aat	aaa	cag	ata	ctg	gtt	cca	gaa	
223	Ala	Lys	Trp	Glu	Ser	Leu	Gln	Asn	Lys	Gln	Ile	Leu	Val	Pro	Glut	
224					1025				1030			1035				
225	ctc	tgt	gct	ata	cat	cca	att	cca	gca	tca	ctg	tgg	aga	aaa	gct	
226	Leu	Cys	Ala	Ile	His	Pro	Ile	Pro	Ala	Ser	Leu	Trp	Arg	Lys	Ala	
227					1040				1045			1050				
228	gtt	tgt	ctc	ccc	agc	ata	ctt	tat	cgc	ctt	cac	tgc	ctt	ttg	act	
229	Val	Cys	Leu	Pro	Ser	Ile	Leu	Tyr	Arg	Leu	His	Cys	Leu	Leu	Thr	
230					1055				1060			1065				
231	gca	gag	gag	cta	aga	gcc	cag	act	gcc	agc	gat	gct	ggc	gtg	gga	
232	Ala	Glu	Glu	Leu	Arg	Ala	Gln	Thr	Ala	Ser	Asp	Ala	Gly	Val	Gly	
233					1070				1075			1080				
234	gtc	aga	tca	ctt	cct	gcg	gat	ttt	aga	tac	cct	aac	tta	gac	ttc	
235	Val	Arg	Ser	Leu	Pro	Ala	Asp	Phe	Arg	Tyr	Pro	Asn	Leu	Asp	Phe	
236					1085				1090			1095				
237	ggg	tgg	aaa	aaa	tct	att	gac	agc	aaa	tct	ttc	atc	tca	att	tct	
238	Gly	Trp	Lys	Lys	Ser	Ile	Asp	Ser	Lys	Ser	Phe	Ile	Ser	Ile	Ser	
239					1100				1105			1110				
240	aac	tcc	tct	tca	gct	gaa	aat	gat	aat	tac	tgt	aag	cac	agc	aca	
241	Asn	Ser	Ser	Ser	Ala	Glu	Asn	Asp	Asn	Tyr	Cys	Lys	His	Ser	Thr	
242					1115				1120			1125				
243	att	gtc	cct	gaa	aat	gct	gca	cat	caa	ggt	gct	aat	aga	acc	tcc	
244	Ile	Val	Pro	Glu	Asn	Ala	Ala	His	Gln	Gly	Ala	Asn	Arg	Thr	Ser	
245					1130				1135			1140				
246	tct	cta	gaa	aat	cat	gac	caa	atg	tct	gtg	aac	tgc	aga	acg	ttg	
247	Ser	Leu	Glu	Asn	His	Asp	Gln	Met	Ser	Val	Asn	Cys	Arg	Thr	Leu	
248					1145				1150			1155				
249	ctc	agc	gag	tcc	cct	ggt	aag	ctc	cac	gta	gaa	gtt	tca	gca	gat	
250	Leu	Ser	Glu	Ser	Pro	Gly	Lys	Leu	His	Val	Glu	Val	Ser	Ala	Asp	

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